

Var. *COMMUNIS* Tryon: FIGS. 1-2, leaf and flower,  $\times \frac{1}{2}$ , from TYPE.

Var. *AMERICANUS* Sims: FIG. 3, plant,  $\times \frac{1}{3}$ .

Var. *FRATERNIFLORUS* Mack. & Bush. FIGS. 4-6: FIGS. 4-5, leaf and flower,  $\times \frac{1}{3}$ , from Fargo, North Dakota; FIG. 6, leaf and flower,  $\times \frac{1}{3}$ , from Martin City, Missouri (TYPE LOCALITY).

Var. *REPENS* (L.) Gray: FIG. 8, plant,  $\times \frac{1}{2}$  (TYPE).

Var. *REPENS* (L.) Gray f. *NASHII* (House) Tryon: FIG. 9, leaf,  $\times \frac{3}{4}$ .

#### IV. NEW SPECIES, VARIETIES AND TRANSFERS

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(Plates 559-569)

IN THE COURSE of studies on the flora of the northeastern United States and adjacent Canada and Newfoundland numerous items have accumulated which need discussion or clarification. In so far as they are in form for publication they are here presented.

*CYPERUS DIANDRUS* Torr., forma ***elongatus*** (Britton), comb. nov. *C. diandrus*, var. *elongatus* Britton in Bull. Torr. Bot. Cl. xix. 226 (1892).

Typical *Cyperus diandrus* has the spikelets 6-32-flowered and 0.4-1.8 cm. long. Forma *elongatus*, which is scattered throughout the range of the typical form, has them much elongate (as in many species of the tribe), 40-50-flowered and 2-2.5 cm. long.

*ARUNCUS dioicus* (Walt.) comb. nov. *Actaea dioica* Walt. Fl. Carol. 152 (1788). *Aruncus allegheniensis* Rydb. in N. Am. Fl. xxii<sup>3</sup>. 256 (1908); Fernald in RHODORA, xxxviii. 180, t. 416, figs. 1, 2, 5 and 8 (1936).

\* *A. dioicus*, var. ***pubescens*** (Rydb.) comb. nov. *A. pubescens* Rydb. in N. Am. Fl. xxii<sup>3</sup>. 256 (1908). *A. allegheniensis* Rydb., var. *pubescens* (Rydb.) Fernald in RHODORA, xxxviii. 179, t. 416, fig. 4 (1936).

In 1936 I published photographs showing how the eastern North American *Aruncus* differs in details of flowers and fruits from the Old World *A. sylvester* Kostel. (1844); and I took up the name *A. allegheniensis* Rydb. (1908) for our plant. I then overlooked, as had Rydberg, the very early description of the Carolinian plant by Walter (June, 1788). *Aruncus* as a genus, rests upon the Old World *Spiraea Aruncus* L. and under the latter name the eastern American plant was known until the recent general acceptance of the genus *Aruncus*. *Aruncus* of the *Rosaceae* superficially resembles *Astilbe* of the *Saxifragaceae* and the two are frequently misidentified; *Astilbe* has perfect flowers,



*Aruncus* is dioecious. Walter's *Actaea dioica* was unusually well described:

*dioica* 3. floribus paniculatis; corollis 4 ad 6 petalis viridescens; pericarpis 5 ad 15 monospermis; foliis triternatis, foliolis obovatis lobatis integrisque; caulibus suffruticosis.

In February, 1839, Asa Gray, studying Walter's herbarium, made the memorandum: "*Actaea dioica!* = *Spiraea Aruncus*." Gray, maintaining our plant as *Spiraea Aruncus* L. and, subsequently, following the sensible, therefore discarded Kew rule, called it *Aruncus sylvester*. It is natural, therefore, that in Gray's own work Walter's name got overlooked. Some European and Asiatic botanists treat *Aruncus* as a variable circumboreal monotype. It should be noted that for the aggregate species of such authors the name *Aruncus dioicus*, based on a Walter name of 1788, has priority over all others yet brought forward.

ILEX MONTANA AND I. DUBIA (PLATE 559). In 1848, in the 1st edition of his Manual, Asa Gray published the new species *Ilex montana* Torr. & Gray in Gray, Man. 276 (1848). There already existed a *Prinos montanus* Swartz, Prodr. 58 (1788) and Gray, in 1856, thinking apparently of the specific rather than the generic name, changed his *I. montana* to *I. monticola* Gray, Man. ed. 2: 264 (1856), a substitute for "I. montana, ed. 1, not *Prinos montanus*, Sw." Of course, by present rules of nomenclature the original *Ilex montana* Torr. & Gray (1848) was the valid name, since there existed no other identical combination. But the suggestion once started, that there was perhaps something not quite regular in the nomenclatural situation, error after error has followed. It was not until thirteen years after the first and wholly correct publication of the combination *Ilex montana* (1848) that *Prinos montanus* Sw. was transferred to *Ilex*, and then by the barest technicality: "ILEX MONTANA, Griseb.—Syn. *Prinos montanus* et *P. sideroxyloides*, Sw.," published by Grisebach in Mem. Am. Acad. n. s. viii. (Plantae Wrightianae), 171 (1861); by a bare technicality because *P. montanus* and *P. sideroxyloides* are not conspecific. Nevertheless, following the example of Asa Gray, who threw aside the wholly right *I. montana* (1848) on account of Swartz's *Prinos montanus*, succeeding authors have mostly assumed that the Grisebach binomial of 1861 has priority over that of Torrey & Gray in 1848! In 1890, to be sure, Britton used the name correctly when he published *I. montana* T. & G., var. *mollis* (Gray) Britton in Bull. Torr. Bot. Cl. xvii. 313 (1890), based on *I. mollis* Gray (1867). For some reason, however, he



promptly abandoned the correct specific name and in 1894, in Mem. Torr. Bot. Cl. v. 217 (1894), took up *I. monticola* Gray (1856) with the synonym "*I. montana* T. & G.; A. Gray, Man. 276 (1848), not Griseb."; but in 1913 he returned, correctly it seems to me, to *I. montana*, in Ill. Fl. ed. 2, ii. 488 (1913). Trelease and some other American authors have also assumed the priority of Grisebach's combination. *Index Kewensis* did not catch the original *I. montana* T. & G. (1848) and gave only that of Grisebach (1861); furthermore it listed as maintained both *I. monticola* Tul. (1857) and *I. monticola* Gray, but started the latter from Gray, Man. ed. 5: 306 (1867), instead of from ed. 2: 264 (1856). Thus, if *Index Kewensis* is taken as the guide in these instances, both *I. montana* Griseb. and *I. monticola* Tul. have right-of-way, whereas they are both later homonyms. For the large-leaved and large-fruited shrub of the Blue Ridge and the Alleghenies the name *I. montana* Torr. & Gray is apparently correct.

Another series of errors started with the citation in the original publication of *Ilex mollis* Gray of the synonym "P[rinos]. *ambiguus* Pursh, not Michx."; and by Trelease in Gray's Synoptical Flora, i. 390, of the citation under the same species, of *I. dubia* (G. Don) BSP., based on *P. dubius* G. Don. The citation of *P. ambiguus* would now be more correctly SENSU Pursh, not Michx. As to *P. dubius* the case seems in some ways clear; in others it is both dubious and ambiguous. The name *Prinos ambiguus* started in Michaux, Fl. Bor.-Am. ii. 236 (1803), for the small-leaved southern shrub, called *I. ambigua* (Michx.) Chapm. by Trelease and by Small, although, as shown by Rehder in Journ. Arn. Arboret. iii. 214 (1922), *I. ambigua* (Michx.) Chapm. must give way to *I. caroliniana* (Walt.) Trel. in Trans. Acad. Sci. St. Louis, v. 347 (1889), which rests on *Cassine caroliniana* Walt. Fl. Carol. 242 (1788). Michaux, who suggested similarity of his species to *Cassine caroliniana* Walt., described it as follows:

AMBIGUUS. P. foliis ovalibus, utrinque acuminatis; pedicellis masc. 1-floris, ad imos ramunculos numerose congestis; foem. solitariis: florum partitione quaternaria.

OBS. Interdum florum partitio quinaria; tunc videtur CASSINE caroliniana. WALTERI. Certo tamen *P. verticillati* LINN. congener.

HAB. in Carolina.

Pursh somewhat altered the description to cover a different species and extended the range north to New Jersey, where *Prinos ambiguus* Michaux is unknown. Pursh's account was as follows:



*ambiguus*. 2. *P. foliis deciduis ovalibus utrinque acuminatis mucronato-serrulatis subtus pubescentibus, floribus 4-5-fidis, masculis ad imos ramulos congestis, foemineis solitariis.*—*Mich. fl. amer.* 2. p. 236.

*Cassine caroliniana.* *Walt. fl. car.* 242.

In sandy wet woods and on the borders of swamps: New Jersey to Carolina.  $\frac{1}{2}$ . July, Aug. *v. v.* Flowers white; berries red, larger than No. 1. [*P. verticillatus*.]<sup>1</sup>

Obviously Pursh added something quite extraneous to the original *Prinos ambiguus* Michaux; but he was not intentionally publishing a new species. He definitely ascribed it to Michaux, and the Pursh amplification should, as already stated, be cited: *P. ambiguus* SENSU Pursh, not Michx. George Don, presumably not knowing either the shrub of Michaux or of Pursh, literally translated into English the account of Pursh, even to "in sandy woods, and on the borders of swamps, from New Jersey to Carolina," and appropriately renamed this shrub, which he probably did not know, *Prinos dubius* G. Don, *Gen. Syst. Gard. Bot.* ii. 20 (1832). In 1888, Britton, Stern & Poggenburg transferred *P. dubius* to *Ilex*, without a word of discussion, and with as little bibliographic citation as was given by Grisebach in publishing his *I. montana* (Sw.) Griseb., barely enough, presupposing a foregiving botanical public, to get by: *Ilex "dubia, (Don). (I. mollis, Gray.),"* BSP., *Prelim. Cat. Anthoph. Pteridoph.* N. Y. 11 (1888). Shortly thereafter Dr. Britton, rightly as it seems to me, discarded the name *I. dubia* for *I. mollis* and published *I. montana* T. & G., var. *mollis* (Gray) Britton in *Bull. Torr. Bot. Cl.* xvii. (1890).

*Ilex montana* (including *I. mollis* and *I. monticola*) is a small tree or large shrub of upland woods along the mountains from western New England and the uplands of New York southward. The range and habitat given by Britton is "Mountain woods, New York and Pennsylvania to Georgia and Alabama. Mountain holly." (*Ill. Fl.* ed. 2, ii. 489); Small (*Man.* 815), calling it "Mountain Holly," says, "Woods, especially mountain slopes, Blue Ridge and more northern provinces, Ga. and Ala. to N. Y.;" Taylor (*Fl. Vic. N. Y.*) has it "In mountain woods" and cites New Jersey material only from the upland of Sussex and Morris Counties; House (*Annot. List N. Y.*, 480), correctly taking up *I. montana*, says "In mountainous woods"; and so does Porter (*Fl. Penn.* 203); and the most northeasterly stations for the species are "on the summit of The Dome and about Plantin Pond, Mt. Wash-

<sup>1</sup> Pursh, *Fl. Am. Sept.* i. 220 (1814).



ington," Berkshire County, Massachusetts (Hoffmann, Fl. Berks. Co. 296). It, therefore, seemed quite improbable that the shrub described by Pursh from "sandy wet woods and on the borders of swamps: New Jersey to Carolina," and thought by him to be the small-leaved *Prinos ambiguus* of Michaux, could have anything to do with the Large-leaved or Mountain Holly, *Ilex montana* Torr. & Gray, of upland woods of the Blue Ridge and the Alleghenies. It seemed evident that, in taking up in place of the clearly typified *I. montana* the wholly indefinite and heretofore unidentified *I. dubia*, Loesener, Mon. Aquifol. (Nov. Act. Abh. k. Leop.-Carol. Deutsch Akad. Naturforscher, lxxviii), 484 (1901) and those who follow him have not understood what Pursh had before him. Since the fullest representation of Pursh's types is in the remarkable collection which had belonged to Benjamin Smith Barton and then to the American Philosophical Society (the collection now deposited at the Academy of Natural Sciences of Philadelphia), I sought there, with the aid of Dr. Pennell and Mr. Long. The species of *Prinos* treated by Pursh, including the type of his *P. laevigatus* (correctly interpreted) are well accounted for by good specimens with Pursh's own labels. There is, however, nothing called by him *P. ambiguus*; but a very full and beautiful sheet in staminate flower (our FIG. 1) bears in his hand an unpublished new name; and in all details, "foliis deciduis ovalibus utrinque acuminatis mucronato-serrulatis subtus pubescentibus, floribus 4-5-fidis, masculis ad imos ramulos congestis," it beautifully checks with the Pursh diagnosis of *P. ambiguus* sensu Pursh, not Michx. That it truly represents what Pursh described, though no fruit is now preserved, there can be no question. The specimen was from the Bartram Garden, the shrubs originally found by Bartram on the Meherrin River, which he crossed above Emporia in Virginia. Dr. Pennell has most kindly allowed me to reproduce a portion of it,  $\times 1$ , as PLATE 559, FIG. 1. FIG. 2 shows the under surface of a leaf,  $\times 10$ , to indicate the pubescence; FIG. 3 is from an isotype,  $\times 1$ , of *Ilex Amelanchier* M. A. Curtis; FIG. 4, the lower surface,  $\times 10$ , of a leaf of the latter. That they are the same species is evident. Barton presented a small fragment of the Pursh type to Asa Gray. This fragment, without further elucidation than a note by Gray, "Pursh, Hb. Barton" is mounted beside the isotype of *I. Amelanchier* in the Gray Herbarium and it bears the Synoptical Flora revision-slip marked by Trelease "*Ilex Amelanchier*." Evidently neither Gray nor Trelease recognized its full significance.



Very briefly the tangled nomenclature of *Ilex montana* and of *I. dubia* follows.

**ILEX MONTANA** Torr. & Gray in Gray, Man. 276 (1848), not *I. montana* (Sw.) Griseb. (1861). *I. ambigua* sensu Torr. Fl. N. Y. ii. 2 (1843), not *Prinos ambiguus* Michx. (1803), source of the name. *Prinos ambiguus* sensu Wood, Class-Book, pt. ii. 243 (1845), not Michx. (1803), obviously, from the description, based on *Ilex ambigua* sensu Torr., although the latter not cited. *I. monticola* Gray, Man. ed. 2: 264 (1856), illegitimate (substitute) name, not *I. monticola* Tul. (1857). *I. Amelanchier*  $\beta$ . *monticola* Wood, Am. Bot. Fl. 208 (1870), obviously, from the description, based on *I. monticola* Gray, although the latter not cited. *I. dubia*, var. *monticola* (Gray) Loesener, Mon. Aquifol. (Nov. Act. Abh. k. Leop.-Carol. Deutsch Akad. Naturforscher, lxxviii), 485 (1901).

Var. **MOLLIS** (Gray) Britton in Bull. Torr. Bot. Cl. xvii. 313 (1890). *I. mollis* Gray, Man. ed. 5: 306 (1867) as to type (*Lowrie*) and descr., excl. synonyms. *I. dubia* sensu Trelease ex Loesener in Koehne, Deutsche Dendrol. 371 (1893) and in Loesener, Mon. Aquifol. 484 (1901), not *I. dubia* (G. Don) BSP. (1888). *I. monticola mollis* (Gray) Britton in Mem. Torr. Bot. Cl. v. 217 (1894). *I. dubia*, var. *mollis* (Gray) Loesener, l.c. 486 (1901) and var. *mollis* forma *Grayana* Loesener, l. c. 487 (1901).

Var. **Beadlei** (Ashe), comb. nov. *I. Beadlei* Ashe in Bot. Gaz. xxiv. 377 (1897). *I. dubia*, var. *mollis*, forma *Beadlei* (Ashe) Loesener, l. c. 487 (1901). *I. dubia*, var. *Beadlei* (Ashe) Rehder, Man. Cult. Trees and Shrubs, 546 (1927), wrongly ascribed to Loesener.

Var. **macropoda** (Miq.), comb. nov. *I. macropoda* Miq. Prol. Fl. Jap. in Ann. Mus. Bot. Lugd.-Bat. iii. 105 (1867). *I. dubia*, var. *macropoda* (Miq.) Loesener, l. c. 487 (1901).

Var. **hupehensis** (Loesener), comb. nov. *I. dubia*, var. *Hupehensis* Loesener, l. c. 488 (1901).

**I. DUBIA** (G. Don) Britton, Stern & Poggenburg, Prelim. Cat. Anthoph. Pteridoph. N. Y. 11 (1888); Trelease ex Loesener in Koehne, Deutsche Dendrol. 371 (1893) as to source of name. *Prinos ambiguus* sensu Pursh, Fl. Am. Sept. i. 220 (1814), not Michx. *P. dubius* G. Don, Gen. Syst. Gard. Bot. ii. 20 (1832), renaming of *P. ambiguus* sensu Pursh, therefore based on the Pursh type. *I. Amelanchier* M. A. Curtis in Chapm. Fl. So. U. S. 270 (1865). *Prinos corymbosus* Pursh "Herb. Barton. mss. ex Sargent," Loesener, Mon. Aquifol. 489 (1901), in synonymy.

The last name, published in synonymy, is similar to but not quite identical with the unpublished trivial "*corymbulosus*," written by Pursh on the label of his material in Barton's herbarium. As already explained, it is evident that, after writing the diagnosis of his new species under the unpublished name, Pursh (or his editors) dropped



the name and erroneously took up *P. ambiguus* Michx. Thus the doubt and ambiguity started and the name given by George Don to the Pursh plant was almost prophetic in its meaning.

*PARTHENOCISSUS QUINQUEFOLIA* (L.) Planch., forma **hirsuta** (Donn), comb. nov. *Ampelopsis hirsuta* Donn, Hort. Cantab. 166 (1796), *nomen nudum*; Roem. & Schultes, Syst. v. 321 (1819). *Cissus hederacea*,  $\beta$ . *hirsuta* (Donn) Pursh, Fl. Am. Sept. i. 170 (1814). *Quiniaria hirsuta* (Donn) Raf. Am. Man. Grape Vines, 6 (1830). *Ampelopsis quinquefolia*,  $\beta$ . *hirsuta* (Donn) Torr. & Gray, Fl. i. 245 (1838). *P. quinquefolia*, var.  $\beta$ . *hirsuta* (Donn) Planch. in DC. Monogr. v<sup>2</sup>. 449 (1887), erroneously ascribed to Torr. & Gray. *P. hirsuta* (Donn) Small, Fl. Se. U. S. 758 (1903), not Planch. (1900). *Psedera hirsuta* (Donn) Greene, Leaf. Bot. Obs. i. 220 (1906). *Psedera quinquefolia*, var. *hirsuta* (Donn) Rehder in RHODORA, x. 26 (1908).

Although Donn (who did not describe the plant), Roemer & Schultes (who took their description from Pursh), Rafinesque, Small, Greene and Rydberg (in his Flora of Prairies and Plains) maintain, merely because of some pubescence on the foliage, *Parthenocissus hirsuta* as a species, I agree with the conclusion of the late Eugene P. Bicknell: "as to the pubescent . . . plant there seems little reason to doubt that it is merely a condition of the common Virginia creeper."<sup>1</sup> When he transferred it, as a variety, to *Psedera quinquefolia*, as var. *hirsuta*, Rehder gave it a restricted western range, "from Ontario (Dr. Wm. Macoun, orally) through western New England and along the western slope of the Alleghany mountains through New Mexico to Mexico. In the North this variety very rarely flowers and fruits, which suggests that it is not at home there."<sup>2</sup> My own experience and that of some others who have watched the plants indicates that the pubescent form is most apt to be in shadier and damper habitats than the glabrous and more fruitful plant; and Bicknell, in the place cited, went even further, saying: "The leaves of young plants are often very pubescent, and in older plants the lower leaves may be pubescent and the later ones quite glabrous". Bicknell's notes were made on Nantucket Island where the plant is fertile; flowering or fruiting specimens of it are also before me from Vermont, from Martha's Vineyard, from Connecticut and from New York. These are all from near the northeastern limit of the species, and Nantucket and Martha's Vineyard are as far east as any stations known for the glabrous plant, while material in the Gray Herbarium from Kenesaw Mountain, Georgia,

<sup>1</sup> Bicknell in Bull. Torr. Bot. Cl. xl. 607 (1913).

<sup>2</sup> Rehder in RHODORA, x. 26 (1910).



is from well to the southeast of the "western slope of the Alleghany mountains." In other words, the pubescent plant may occur almost anywhere through the range of the glabrous one.

*Parthenocissus quinquefolia* is essentially a southern species, common in the southern United States and extending northward to southwestern Maine, southern New Hampshire, Vermont, New York, Indiana, Illinois and Iowa. There is no material of it in the Gray Herbarium from Canada, where it is wholly or chiefly replaced by the northern and western *P. vitacea* (Knerr) Hitchc. All material of the genus which I have seen from Quebec, Prince Edward Island, New Brunswick, Nova Scotia and Ontario belongs to the latter species. It is, therefore, important to consider for a moment the facts that the basic *Hedera quinquefolia* L. Sp. Pl. i. 202 (1753) apparently drew its trivial name from *Edera quinquefolia canadensis*, Cornut, Can. Pl. 99, t. 100 (1635) and that by Linnaeus the species was assigned the unequivocal "*Habitat in Canada.*" From this habitat one might infer that the Linnean plant was the Canadian *Parthenocissus vitacea*. It should be borne in mind, however, that Linnaeus gave five other references, including Gronovius (who could have had only the southern species) and that his diagnosis was derived from Mitchell; furthermore, the Cornut plate shows an exaggerated number of adhesive disks on the tendril-branches and his description specially mentions them. It is probable, then, that Cornut's plant was wrongly ascribed a Canadian origin. With the vague geographic concepts of his time Cornut included in his book plants of Spain, Greece, India and other Old or New World areas. Unless his descriptions and illustrations are definitely of known Canadian species it is unsafe to assume that they were based on Canadian plants. The name *Parthenocissus quinquefolia* may safely be left to the species with abundant adhesive disks, paniculately clustered cymes with solitary lower branches, and relatively small fruits.

As to the nomenclatural basis of forma *hirsuta*, Pursh, in first describing it, took up the name used without definition by Donn; so did Roemer & Schultes in publishing *Ampelopsis hirsuta*. Donn's name was thus validated and Donn should be cited parenthetically.

**PARTHENOCISSUS VITACEA** (Knerr) Hitchc., forma **dubia** (Rehder), comb. nov. *P. hirsuta* Graebner in Gartenfl. xlix. 249 (1900), not *P. hirsuta* (Donn) Small (1903), later homonym—see synonymy above. *P. vitacea*, var. *dubia* Rehder in Mitt. Deutsch. Dendr. Ges. xiv. 135



(1905). *Psedera vitacea*, var. *dubia* (Rehder) Rehder in RHODORA, x. 28 (1908).

VITIS LABRUSCA L., forma **alba** (Prince), comb. nov. Var. *alba* Prince, Treatise on the Vine, 181 (1830).

The form with very pale fruit, either white with amber or russet tone or pinkish.

VITIS RUPESTRIS Scheele, forma **dissecta** (Eggert), comb. nov. Var. *dissecta* Eggert ex Bailey in Gray, Syn. Fl. N. Am. i. 422 (1897).

VITIS RIPARIA Michx., var. **syrticola** (Fernald & Wiegand), comb. nov. *V. vulpina*, var. *syrticola* Fernald & Wiegand in RHODORA, xxv. 212 (1923).

The name *Vitis riparia* Michaux, for the common Riverbank or Frost Grape, with long porrect and acuminate leaf-lobes, small acid fruits with a heavy bloom, and very thin diaphragms at the stem-nodes was correctly applied by DeCandolle, Torrey, Torrey & Gray and Emerson, and by Gray (as a species or as *V. cordifolia*, var. *riparia*) in the first five editions of the *Manual*, by Watson in the 6th edition and by Planchon and numerous other students of our grapes. The name *V. vulpina* L., on the other hand, was as regularly misapplied for many years to the southern *V. rotundifolia* Michx. (the Muscadine).

That the name *Vitis vulpina*, like most Linnean names resting partly on material well known to Linnaeus at first hand, partly on literary references and specimens not so clearly understood by him, does not apply to *V. rotundifolia* everyone is now agreed. In recent years, unjustifiably as it will appear, it has been applied to the northern and almost transcontinental and western *V. riparia* Michx. In June, 1893, Professor L. H. Bailey published a letter from the late Dr. N. L. Britton which included the following item on the Linnean herbarium:

“*Vitis vulpina*, Linn.—Flowering specimens from the Upsala [Sweden] garden and leaves from Kalm. Planchon correctly refers them to the *V. riparia*, Michx., the type of which is in Michaux’ herbarium at Paris, and is correctly understood as the common river-bank grape.”<sup>1</sup>

That would seem to be conclusive; and Bailey forthwith regularly reduced *Vitis riparia* Michx. to *V. vulpina* L., in Gray’s Synoptical Flora and elsewhere. But in 1898 Bailey wrote:

“Since that time, however, I have myself examined Linnaeus’ specimens in London, and find that he had specimens of two species under the name of vulpina. On one sheet are two leaves, one marked *V. vinifera*

<sup>1</sup> Britton as quoted by Bailey in Am. Gard. xiv. 353 (June, 1893).



and the other *V. vulpina*, both in Linnaeus' hand. The former is the wine-grape (*V. vinifera*), and the latter is the river-bank grape (*V. riparia*). Another herbarium sheet, however, has a large flowering specimen, labelled, in Linnaeus' hand, *V. vulpina*, and this is the frost-grape (*V. cordifolia*). It would have been better to have taken this latter specimen as Linnaeus' type, and to have made the name *vulpina* supplant *cordifolia*; but since the other disposition has been made of the case, I shall not make the change."<sup>1</sup>

In March, 1934, Bailey quoted his statement just given and added:

"My opinion still holds that the specimen represents the winter grape (*V. cordifolia*) although a new examination of the specimen itself might afford additional clues. . . . The Linnaean sheet identified as *cordifolia* is inscribed by Linnaeus with the name *vulpina* and the numeral 4 that refers to the entry in *Species Plantarum*. Rules of nomenclature adopted since the foregoing publications require, on the face of the record, that *vulpina* supplant *cordifolia*, in which case *riparia* comes up for the plant now known as *vulpina* or frost grape; the net gain would be confusion. But the case is not as simple as this.

As one looks at the Linnaean account in *Species Plantarum* one is struck by the fact that *Vitis vulpina* is not described, but is attended with the phrase "foliis cordatis dentato-serratis utrinque nudis"; then is cited "*Vitis vulpina dicta virginiana nigra*" from Plukenet, *Almagestum*, 1696; apparently Linnaeus took the name *vulpina* from Plukenet. The Latin line precludes *V. Labrusca*, *aestivalis*, and its relatives, and it leaves only the frost grape and winter grape and the muscadine among Virginian species to qualify for the name. Linnaeus cites no collector; yet the sheet bears the letter K which means Kalm, who collected in Canada, New York, New Jersey and Pennsylvania, whereas Linnaeus ascribes *vulpina* to Virginia (and he would hardly have used the term "Virginia" as broadly as to include New Jersey and Pennsylvania), and also H. U. which means the garden or hortus at Upsala. The word *fox* (*vulpina*) does not aid us in identifying the Plukenet grape for at that time it may have been applied to more than one species and not alone to *V. Labrusca* as at present as, indeed, is done by Plukenet himself; in fact, the muscadine (*V. rotundifolia*) was once known as fox grape.<sup>2</sup>

The Linnaean sheet bears two specimens, the lower one of three leaves apparently from the wild and collected by Kalm, the upper one of three<sup>3</sup> leaves and two flower-clusters being grown at Upsala from Kalm seeds. The Linnaean sheet of *Vitis Labrusca* is also marked with a K, showing that Peter Kalm collected it; and in this case, as we have seen, the species is supported by the picture (Fig. 98) in Plukenet, but we have no cited figure back of *V. vulpina*.

It is apparent that Linnaeus meant to designate two American grapes, one species (*Labrusca*) with tomentose leaves, and the other (*vulpina*) with naked leaves. We have noted (page 186) that his *Labrusca* appar-

<sup>1</sup> Bailey, *Evolution of Our Native Fruits*, 103 (1898).

<sup>2</sup> In July, botanizing with two experienced amateurs of Norfolk, Virginia, we came to *V. vulpina* (*V. cordifolia*) on the outermost coast of Virginia (Back Bay). Looking at it they immediately exclaimed "Fox Grape!"—M. L. F.

<sup>3</sup> The photograph shows only 2.



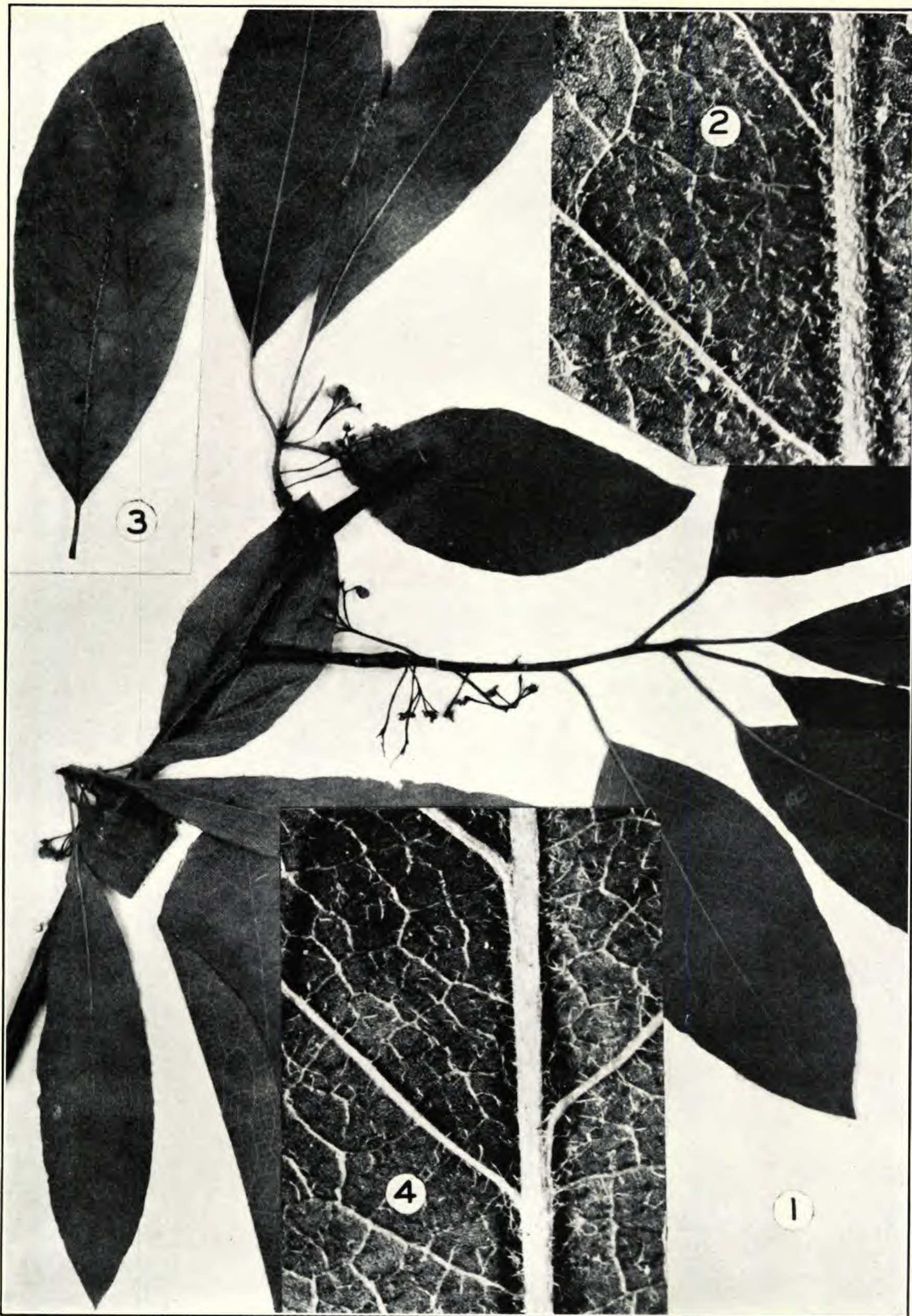


Photo. W. H. Hodge

*ILEX DUBIA*: FIG. 1, TYPE,  $\times 1$  (courtesy of Dr. FRANCIS W. PENNELL); FIG. 2, lower surface of leaf,  $\times 10$ ; FIG. 3, leaf,  $\times 1$ , from ISOTYPE of *I. Amelanchier*; FIG. 4, lower surface of leaf shown in FIG. 3,  $\times 10$ .





Type-sheet of *VITIS VULPINA*,  $\times \frac{1}{2}$  (courtesy of Mr. S. SAVAGE).



ently included *aestivalis*, and his *vulpina* is undoubtedly also to be considered an aggregate species and one therefore has considerable latitude in interpretation of it. If there is extant an authentic Plukenet specimen of his "Virginian nigra" it might either change the application of *V. vulpina* or eliminate it as a *nomen confusum*.<sup>1</sup>

In view of the simple facts, that in preparing *Species Plantarum* Linnaeus had in his own herbarium and himself labeled two sheets bearing what he called *Vitis vulpina* and described the fuller of them in the very typical Linnean diagnosis (although Bailey says "not described"), the earlier references are wholly secondary in a nomenclature which avowedly and actually begins with 1753. Obviously, as Professor Bailey correctly concluded, the full sheet bearing above a flowering branch from the Upsala garden ("H.U." below the specimen indicating Hortus Upsaliensis) should stand as the type of *V. vulpina*. Plate 560 shows this sheet,  $\times \frac{1}{2}$ , and probably every botanist who knows the southern *V. cordifolia* will agree with Bailey that the type of *V. vulpina* L. is *V. cordifolia* Michx. Bailey protests the ascription by Linnaeus of a plant supposedly originating from Kalm's collections to Virginia; but when Linnaeus got a *Potentilla* from Hudson Bay and named it *P. pensylvanica* and a *Berberis* from the South and called it *B. canadensis*, it is evident that he had no clearer conception of American geography than do most present-day European botanists and little appreciation of the geographic significances of the names he repeatedly used; it sometimes seems as if he had a small series and used at random such trivials as *canadensis*, *marilandica*, *pensylvanica* and *virginiana*. At any rate, Kalm spent much time within the range of true *V. vulpina* (*V. cordifolia*), which occurs in northern Delaware, southern New Jersey and eastern Pennsylvania. It would have been very difficult for him not to see it.

Although Bailey has said that from a correction of the error to which he clings "the net gain would be confusion," it can not be overlooked that the confusion would be only temporary and that long prior to his misapplying the name *Vitis vulpina* L. to *V. riparia* Michx., instead of to *V. cordifolia* Michx., the Linnean name had been correctly used for *V. cordifolia* by several early botanists: by Muhlenberg<sup>2</sup> who definitely reduced *V. cordifolia* to its synonymy; by Torrey, who did the same<sup>3</sup>; by Beck, Le Conte and several others. In fact, if there

<sup>1</sup> Bailey, Gent. Herb. iii. fasc. iv. 236 (1934).

<sup>2</sup> Muhl. Cat. 27 (1813).

<sup>3</sup> Torr. Fl. N. Mid. U. S. 264 (1824).



were any question about the identity of *V. vulpina* and *V. cordifolia* it was very clearly settled by the distinguished botanist who bought the Linnean collections and established them in London. In 1819 Sir James Edward Smith, treating *Vitis* in Rees' Cyclopaedia (xxxvii.) correctly applied the name *V. riparia* Michx. to the "Sweet-scented Vine," with "leaves unequally and deeply toothed, slightly three-lobed." He also correctly described *V. vulpina* L., with the synonym *V. cordifolia* Michx., the "Winter Grape, or Chicken Grape"; and, from his study of the Linnean material which he had purchased, explicitly said: "This is certainly the *vulpina* of Linnaeus, and consequently of Willdenow, though Pursh cites the latter author under the foregoing species [*V. aestivalis*]. The *leaves* of the present have but a slight indication of a lobe at each side, and are more oblong and pointed than either of the two last [*V. Labrusca* and *V. aestivalis*]; being moreover quite smooth, from the earliest period, except the little axillary tufts of hair on the under side."<sup>1</sup> See PL. 560.

Sir James Edward Smith and several others of his time had the identities correct and Smith's correct typification of 1819 antedates the erroneous one by three-fourths of a century. By our rules of nomenclature (I do not get the full significance of Bailey's reference to "Rules of nomenclature adopted since the foregoing publication") Smith's typification, having no flaw in it, properly stands. The present-day temporary confusion is wholly secondary to the correct typification established 120 years ago!

VITIS ARANEOSA Le Conte.—In 1853 John Le Conte published as new species of the southeastern states four members of *Vitis*. One of them, *V. araneosa* Le Conte in Proc. Acad. Philad. 1852-53: 272 (1853), seemed, in its "berries of a middling size, .5 of an inch in diameter, black," so distinct from ordinary *V. aestivalis* Michx. to which Bailey (Gent. Herb. iii.<sup>4</sup> 154) reduces it and which he describes as having "berries . . . with medium to thick bloom," that I took to Philadelphia a representative series of the rufescent-leaved species for comparison with it. Le Conte's account was as follows:

<sup>1</sup> At the Aberdeen meeting of the British Association in September, 1885, Radlkofer thus referred to Smith's elucidation of the Linnean species: "As far as the Linnean Herbarium is concerned, Sir Edward Smith in his day endeavoured to extract therefrom a correct conception of the Linnean species; but the slender scientific means of his time enabled him to arrive at the goal in only a few instances. Nevertheless his contributions to Rees's 'Cyclopaedia' on this subject are of great value, and deserve republication in a collective form, in order to make them generally available."—Radlkofer in Rep. Fifty-first Meeting Brit. Assoc. Adv. Sci. 1080 (1886).



6. *V. ARANEOSUS*. Foliis lato-cordatis, sublobato-angulatis, integris, trilobis aut quinquelobis, lobis acuminatis, dentatis, dentibus submucronatis, supra glabris, subtus arachnoideo-villosis, villositate plus minus ferruginea. Racemis subdensis, baccis maioribus nigris.

*Hab.*—In the upper parts of Georgia. Vulg. Fox grape.

Stem moderately large and high. Leaves broad, cordate, sublobately angled, entire and three or five-lobed, acuminate dentate; the teeth submucronate, above glabrous, beneath arachnoideo-villous, more or less ferruginous; in the older leaves this villosity forms into small tufts or knots, and in the very oldest almost entirely vanishes, although in the youngest it is very thick and close. Racemes dense; berries of a middling size, .5 of an inch in diameter, black, often very sweet and agreeable. The leaves are sometimes 8 inches long and as many wide.

The species is well worth cultivating.

Whereas three of Le Conte's four newly proposed species were from New Jersey, from "Carolina and Georgia in swamps," and from "Virginia and Maryland," respectively, *Vitis araneosa*, with black berries half-an-inch in diameter, came from "the upper parts of Georgia," where it is called "Fox grape." One of the several folders of loose leaves and branchlets in the Le Conte series contains small and medium-sized leaves as described by Le Conte and at least one to support the "sometimes 8 inches long and as many wide" of his account. This folder has the accompanying label:

(3) From Dr. Ware's gardens at Athens [upper Georgia], Sept. 14th, 1850. Supposed to be the Wild Fox or Winter Grape. Fruit in very compact bunches or clusters; tolerably pleasant to the taste; not very sour. Color = black. Size = [a circle  $\frac{1}{2}$  in. across].

That this sheaf of specimens, the only ones from upper Georgia and closely matching the original account of *Vitis araneosa*, should be accepted as the type-material of that species there seems no reasonable doubt. It is, therefore, significant that it is closely matched by an isotype of *V. rufotomentosa* Small, Fl. Se. U. S. 756, 1334 (1903) and quite as well by material from upper Georgia (Kenesaw Mt., Perry & Myers, no. 935) which Professor Bailey has correctly marked *V. rufotomentosa*. The latter species, originally described by Small with "berries black, with little or no bloom," is, it seems to me, inseparable from *V. araneosa* Le Conte (1853) and must take the latter name, *V. araneosa* Miquel from Sumatra dating from 1860, *V. araneosa* Dalz. & Gibs. of India from 1861.

*SPHAERALCEA angusta* (Gray), comb. nov. *Malvastrum angustum* Gray in Mem. Am. Acad. n. s. iv<sup>1</sup>. (Pl. Fendl.), 22 (1849).

It is with great hesitation that I make a transfer in the complex and